

# Exercise During Pregnancy



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# Frequent questions

- objectives?
- What type of exercise?
- Is it safe ?
- How it will affect the results of pregnancy ?
- Guidelines?
- Contraindication?

# اهداف

1. پیشگیری از وقوع ناراحتی های جزئی بارداری
2. تقویت عضلات شکم و لگن
3. مناسب شدن کار سیستم قلبی تنفسی
4. آمادگی مادر برای زایمان
5. توان بخشی بهتر بعد از زایمان

# فواید ورزش در بارداری

1. مداخلات کمتری در بارداری و زایمان نیاز می شود
2. انطباق بهتر مادر با تغییرات فیزیولوژیک بارداری
3. حفظ تون عضلانی بدن
4. کاهش فشار روی عضلات
5. کوتاه شدن طول مدت لیبر
6. برگشت پذیری سریع تر بعد از زایمان

# Benefits

- Improved cardiovascular fitness
- Control of maternal weight gain
- Reduced subjective discomforts of pregnancy
  - Swelling, leg cramps, fatigue
- Positive influence of labor & delivery (Clapp et al)
  - Decreased risk of operative or assisted deliveries
  - Shorter active labor
  - Increased fetal tolerance of labor
- Possible reduced risk of preeclampsia, GDM

# Psychological Well-Being

- Improved mood
- Decreased stress
- Improved self-image
- Increased sense of control and relief of tension



# Postpartum Well-Being



- Improved weight loss
- Improved psychological well-being
- No adverse impact on breastfeeding.

# Neonatal & Childhood Benefits



- Clapp JF: Morphometric and neurodevelopment outcomes at age 5 years of offspring of women who continued to exercise regularly throughout pregnancy.
  - Less body fat at birth and 5 yrs
  - Similar motor, integrative & academic readiness as control groups
  - Higher scores on Wechsler scales and tests of oral language skills.





# Expert Guidance

# Guidelines for Exercise in Pregnancy

- ACOG in evolution
  - **1985:** HR  $\leq$ 140 BPM with maximum duration of exercise = 15 minutes
  - **1994:** Less cautious and began to stress the health benefits of exercise
  - **2002:** 30 minutes or more of moderate exercise a day recommended
  - **2003:** All women without contraindications should participate in aerobic & strength-conditioning exercise.

# ACOG 2002

- Recognition that regular exercise is beneficial to even pregnant women and should be encouraged.
- All women should be evaluated clinically before recommendations made.



Obstet Gynecol 2002; 99: 171-173.

# Absolute Contraindications

- Hemodynamically significant heart disease
- Restrictive lung disease
- Incompetent cervix/cerclage
- Multiple gestation at risk for premature labor
- Persistent second- or third-trimester bleeding
- Placenta previa after 26 weeks
- Premature labor during current pregnancy
- Ruptured membranes
- Preeclampsia/pregnancy induced hypertension

# Relative Contraindications

- Severe anemia
- Unevaluated maternal cardiac arrhythmia
- Chronic bronchitis
- Poorly controlled type 1 diabetes
- Extreme morbid obesity
- Extreme underweight (BMI < 12)
- Heavy smoker
- IUGR in current pregnancy
- Poorly controlled hypertension
- Poorly controlled seizure disorder
- Poorly controlled hyperthyroidism

# ACOG 2002

- Acknowledges the potential of exercise to prevent & treat gestational diabetes mellitus
- Recommends avoiding exercise involving both
  - the supine position “as much as possible”
  - prolonged periods of motionless standing
- Notes that strenuous activity has not been linked to poor fetal growth or outcomes

Obstet Gynecol 2002; 99: 171-173

# ACOG & Safety

- Safety of each sport determined by the “specific movements required by that sport.”
- Scuba diving is contraindicated
- Exertion above 6000 feet carries risks.
- Hyperthermia associated with exercise has not be shown to be teratogenic

# Higher Risk Activities

- Contact sports with risk of abdominal trauma
  - Hockey
  - Basketball
  - Soccer
- High Risk Sports with risk of both falls and trauma
  - Gymnastics
  - Horseback riding
  - Downhill Skiing
  - Vigorous racquet sport

Obstet Gynecol 2002; 99: 171-173



# Warning Signs to Terminate Exercise

- Vaginal bleeding
- Dyspnea prior to exertion
- Dizziness
- Headache
- Chest pain
- Muscle weakness
- pain or swelling
- Preterm labor
- Decreased fetal movement
- Amniotic fluid leakage



# SOGC Recommendations 2003

1. All women without contraindications should be encouraged to participate in aerobic and strength-conditioning exercises as part of a healthy lifestyle during their pregnancy.

(II-1,2B)



# SOGC Recommendations 2003

2. Reasonable goals of aerobic conditioning in pregnancy should be to maintain a good fitness level throughout pregnancy without trying to reach peak fitness or train for an athletic competition. (II-1,2C)



TABLE 2

**MODIFIED HEART RATE TARGET ZONES FOR AEROBIC EXERCISE IN PREGNANCY<sup>23,36</sup>**

<b>Maternal Age</b>	<b>Heart Rate Target Zone (beats/min)</b>	<b>Heart Rate Target Zone (beats/10 sec)</b>
Less than 20	140–155	23–26
20–29	135–150	22–25
30–39	130–145	21–24
40 or greater	125–140	20–23

Reprinted with permission from the Canadian Society for Exercise Physiology.

# SOGC Recommendations 2003

3. Women should choose activities that will minimize the risk of loss of balance and fetal trauma. (III-C)



# Table 3

## Exercise in Pregnancy

Olson, David; Sikka, Robby S.; Hayman, Jacob; Novak, Melissa; Stavig, Christina  
Current Sports Medicine Reports. 8(3):147-153, May/June 2009.

doi: 10.1249/JSR.0b013e3181a61d51

Low-Risk Sports	High-Risk Sports
Swimming	Road cycling
Running	Downhill skiing or waterskiing
Aerobics	Court sports (e.g., basketball, tennis)
Dance	Scuba diving
Spinning or cycling	Horseback riding
Walking	Soccer
Cross-country skiing	Ice hockey
Light weight training	Gymnastics
Yoga/Pilates	Martial arts
Rowing	

Current Sports Medicine Reports

TABLE 3. Sports recommendations.

# SOGC Recommendations 2003

4. Women should be advised that adverse pregnancy or neonatal outcomes are not increased for exercising women. (II-1,2B)



# SOGC Recommendations 2003

5. Initiation of pelvic floor exercises in the immediate postpartum period may reduce the risk of future urinary incontinence. (II-1C)





# SOGC Recommendations 2003

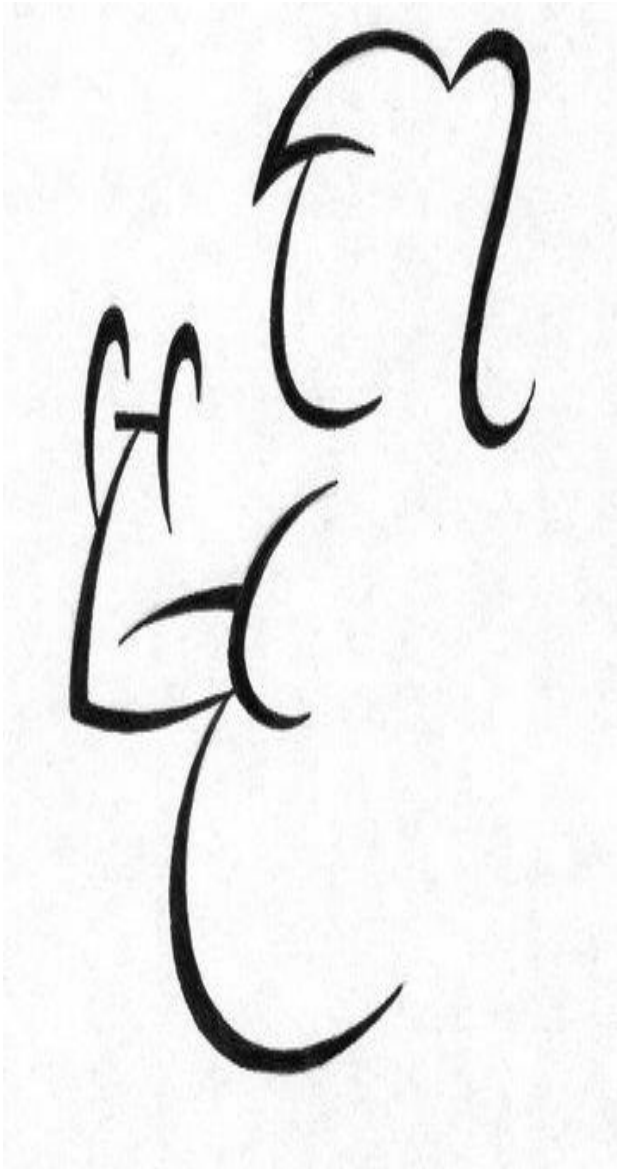
6. Women should be advised that moderate exercise during lactation does not affect the quantity or composition of breast milk or impact infant growth. (I-A)



Olson et al, Exercise and Pregnancy 2009  
 Curr Sports Med Rep ; 8(3): 147-153

**TABLE 4.** Recommendations.

Previously Sedentary	Moderately Active	Elite Athlete
Start with 15 min of exercise, 3 d·wk <sup>-1</sup>	Start with 30 min of exercise, 4 d·wk <sup>-1</sup>	Start with 30 min of exercise, 4 d·wk <sup>-1</sup>
Aerobic exercise, 65%–75% of maximum heart rate	Aerobic exercise, 65%–85% of maximum heart rate	Aerobic exercise, 75%–85% of maximum heart rate
Walking	Running	Continuation of previous sports should be discussed with coach/trainer/physician and should be adjusted based upon previous activity level
Swimming	Cycling/Spinning	Taper down or modify protocol in third trimester
Aerobics	Aerobics	May return to competition within 4–6 wk of delivery depending upon method
Stationary cycling	Swimming	Avoid trauma and avoid cutting sports after first trimester
Goal 30 min, 4 d·wk <sup>-1</sup>	Goal 30 min, 5 d·wk <sup>-1</sup>	Goal 30–40 min, 6–7 d·wk <sup>-1</sup>



Recommended  
exercise



**One of the best cardiovascular exercises without jarring your knees and ankles safe the nine months**

## Jogging - Running

- Going for a jog is the quickest and most efficient way to work your heart and your body. You can tailor it to your schedule -- running 15 minutes one day when that's all you can fit in and 30 the next when you have the time.







**the best and safest exercise for pregnant women**

## Aquanatal classes

- Many women find aquanatal classes enjoyable during pregnancy. Exercising while standing in water is gentle on joints and can help lessen swelling in legs, which is a common symptom in late pregnancy.



## Yoga and stretching



Yoga and stretching can help maintain muscle tone and keep you flexible with little if any impact on your joints. However, you may have to augment a yoga regime by walking a few times a week to give your heart a workout. Be careful not to overdo the stretching. You will be more supple as a result of the effects of relaxin, which causes your ligaments to be more pliable. Don't hold the stretches for too long or try to develop your flexibility too much.



# Pilates

Pilates is a form of exercise which combines **flexibility and strength** training with body awareness, breathing and relaxation. The exercises are based on certain movement patterns performed with your tummy and pelvic floor muscles -- known in Pilates as the "stable core" or base. These muscles are also known as deep stabilizing muscles. Because Pilates targets the tummy and pelvic floor muscles and these muscles can weaken during pregnancy, Pilates exercises can be useful.



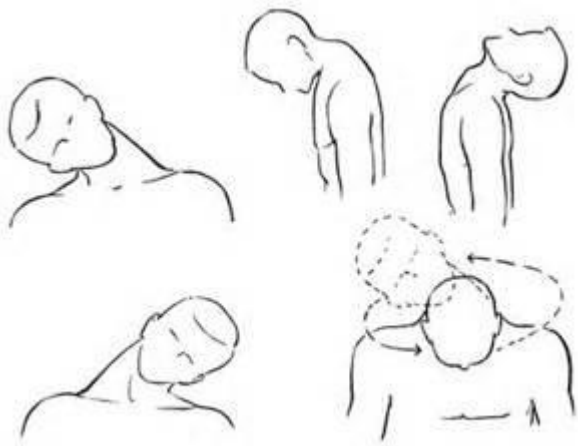
## Low-impact aerobics

- One good thing about an aerobics class is that it's a consistent time slot when you know you'll get some exercise. If you sign up for a class specifically designed for pregnant women, you'll get to enjoy the camaraderie of others just like you, and can feel reassured that each movement has been deemed safe for you and the baby.

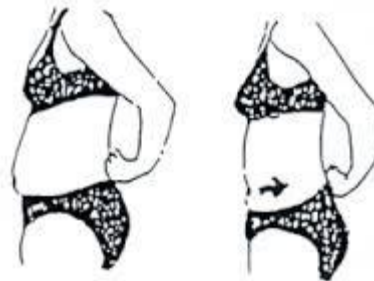
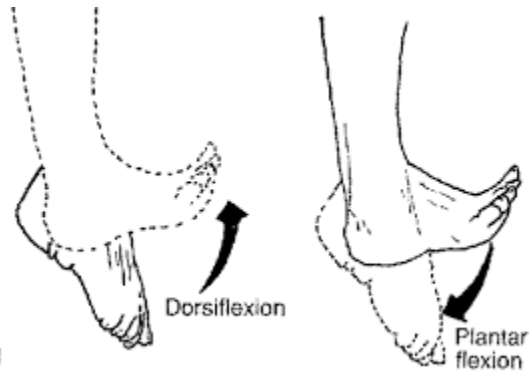


# Protocol of supervised exercise2015

Position: Standing		
Head and neck stretches	Flexion, extension, lateral bending	Hold each position for 20 seconds
Side bends	With one arm raised, bend trunk laterally to the opposite side	Hold for 20 seconds on each side
Pelvic mobilization	Perform anteversion, retroversion and circumduction of the hip	One minute
Pelvic tilts with pelvic floor muscle training	Perineal exercises performed with the pelvis tilted backward	15 rapid contractions
Stimulation of venous flow in the lower limbs	Plantar flexion	One minute
Stimulation of venous flow in the lower limbs	Squatting using support equipment such as the back of a chair, a wall bar or a stick	2 series of 10 repetitions
Abdominal activation	Contract the transversus abdominis muscle while breathing out	15 repetitions



# Side bends



# Protocol of supervised exercise2015

Position: Seated (using an exercise mat)		
Stretching	Triceps brachial muscle; pectoral muscles; posterior thoracic region; hip abductor muscles; posterior thigh muscles	Hold for 20 seconds each
Pelvic floor muscle training	With thighs flexed and abducted and the soles of the feet together, perform perineal exercises.	15 rapid contractions; 15 contractions held for 10 seconds with a 5-second resting period

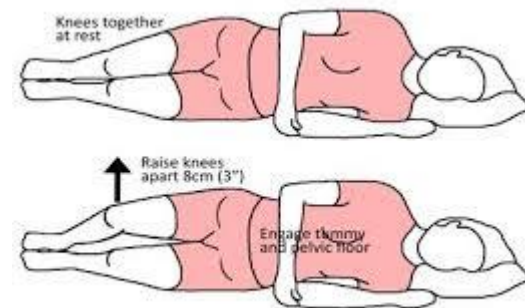
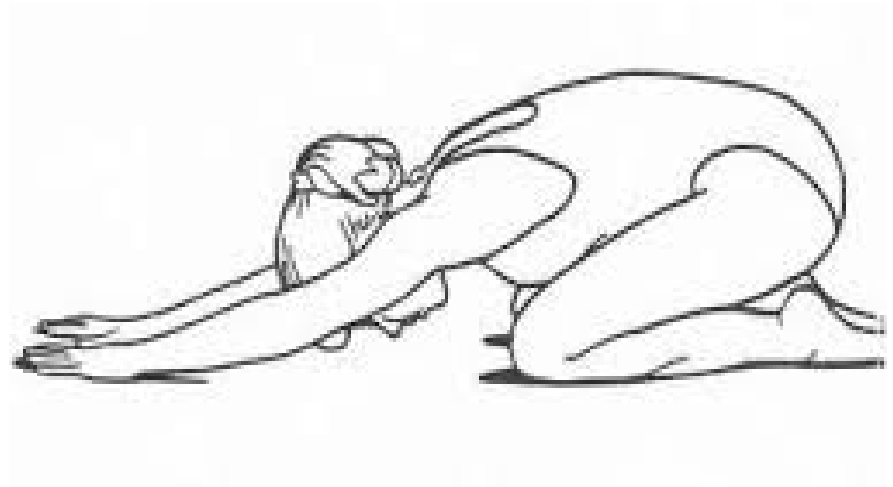
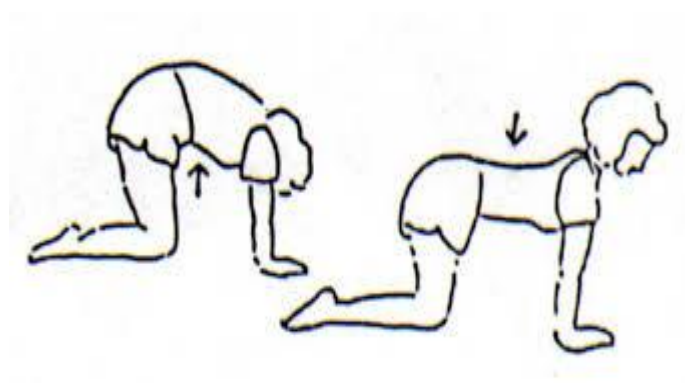


Fig 36. 'Clam' leg lift exercise

# Protocol of supervised exercise2015

Position: On all fours		
Mobilization of the spine and pelvis	Breathe in, facing forwards, and tilt the pelvis forward; breathe out, lowering head (blow onto stomach) and tilt the pelvis backward.	10 repetitions
Abdominal activation	Contract the abdomen while breathing out slowly, as if trying to make the belly button touch the back.	15 repetitions
Back stretching	Sitting on heels with knees apart, raise arms above head, rest arms and forehead on the mat.	Hold position for 20 seconds







# Protocol of supervised exercise2015

<b>Position: Lateral Decubitus</b>		
Stretching and stimulation of the venous circulation in the lower limbs	Flexion/extension of the ankle with one leg raised.	3 series of 20 seconds on each side
Stretching and trunk rotation	With hips and knees flexed and knees together, rotate the trunk in the opposite direction	Hold for 20 seconds
<b>Position: Dorsal Decubitus</b>		
Stretching and relaxing the lumbopelvic region	With knees flexed and apart, raise both legs up to the chest and hold; perform flexion/extension of the ankles, swinging the trunk slightly to each side	Hold for one minute
Manual traction of the spine	With knees flexed and feet flat on the mat, the woman is asked to raise her hips.	Hold for one minute



# Protocol of supervised exercise2015

Relaxation in lateral decubitus		
Breathing training for labor	Diaphragmatic breathing with prolonged exhalation through pursed lips.	3 minutes
Relaxation	Progressive relaxation; massage; visualization.	7 minutes

# Instructions for exercises to be performed at home

Pelvic floor muscle training	<p>In any position, perform rapid contractions of the pelvic floor muscles. 30 repetitions.</p> <p>Seated with your legs abducted and soles of the feet together, perform 20 contractions, holding each contraction for 10 seconds.</p>
Mobilizing and stretching the spine	<p>In dorsal decubitus with your knees apart and bent, raise your legs towards your chest. Hug your legs for 20 seconds</p> <p>Get down on your hands and knees. 10 repetitions.</p> <p>Kneechest Hold for 20 seconds.</p>
Exercises to stimulate venous return	<p>On foot, plantar flexion. 30 repetitions.</p> <p>In lateral decubitus and with one leg raised, rotate your ankle. Two series of 20 repetitions. Change sides, and repeat with the other leg.</p>
Exercises for a healthy pregnancy	<p>Walking, water aerobics, stationary bicycle or swimming – 30 minutes. Avoid the hottest times of the day (between 10 am and 3 pm), and eat something light 30 minutes before exercising. Use comfortable clothes and running shoes if you go walking or if you choose to exercise on a stationary bicycle.</p>

# نکات ضروری قبل از شروع تمرین

1. مثانه خالی باشد
2. از زیور آلات استفاده نشود
3. لباس و شلوار راحت پوشیده شود
4. ملحفه و بالش به همراه داشته باشد
5. بامعده خالی یا خیلی پر تمرین نشود
6. در حین تمرین نفس حبس نشود
7. از زور زدن هنگام حرکات اجتناب شود
8. حرکات صحیح و دوطرفه باشد
9. محیط آرام باشد خیلی گرم و آلوده به گرد و خاک نباشد
10. حرکات آرام انجام شود
11. در صورت احساس هرگونه ناراحتی از ادامه تمرین خودداری شود.

نکته : ورزشها بهتر است سیر منطقی داشته باشد از سر شروع شده به پا بیاید، ابتدا ورزشهای نشسته و سپس خوابیده انجام شود

پشت کاملاً صاف و در محور بدن، نحوه صحیح دم و بازدم





کشش در ناحیه گردن ، هدف : کاهش فشار و درد ناحیه گردن













تقویت عضلات شانه ، هدف: کاهش فشارگردن و شانه و تقویت عضلات شانه و  
قسمت بالای پشت







# تقویت عضلات بازو و ستون فقرات، و سینه و جلوگیری از شل شدن آنها

















هدف: باعث افزایش فاصله رحم و معده و کاهش ترش کردن و سوزش سردل







گرم کردن دستها و مشت ها، هدف : رفع خستگی دست ها ،  
جلوگیری از ادم، مورمور و خواب رفتگی و بیحسی دستها











تاب دادن ، هدف: تقویت و انعطاف پذیری عضلات کمرودنده ها ،  
افزایش حرکات دودی روده و پیشگیری از یبوست





کشش درپهلو ، هدف : حفظ انحنای طبیعی ستون فقرات ، تقویت و انعطاف پذیری عضلات کمرودنده ها ، افزایش حرکات دودی روده و پیشگیری از یبوست



کشش در ناحیه کشاله ران، هدف : کاهش درد ناحیه کشاله ران و  
تقویت عضلات پشت و پریینه، مفاصل لگن











# تمرین چهار دست و پا، هدف : کاهش درد کمر و تقویت ستون فقرات و عضلات شکم









تمرین در وضعیت درازکش، هدف: تقویت عضلات شکم و کمر،  
اصلاح انحنای قوس کمر، کاهش کمردرد و تقویت لگن













## هدف : تقویت عضلات پشت و سینه و رفع خستگی









هدف : کاهش درد ناحیه کشاله ران ، تقویت عضلات پرینه و لگن





# تمرینات کف لگن

- این تمرینات در هر وضعیتی ، خوابیده به پشت بازانوی خمیده،نشسته به حالت چهارزانوویا چهار دست وپا قابل انجام است.
- تمرین اول : عضلاتی که از دفع ادرار و گاز جلوگیری می کنند منقبض شود. سپس عضلات شل شود.(30-80 بار)
- واژن آسانسوری (چند بار در روز)

# ماساژ

- ماساژ ناحیه گیجگاهی (شقیقه ها) کمک به رفع سردرد
- ماساژ ناحیه شانه ها و کتف کمک به احساس شلی و راحتی در ناحیه شانه ها
- ماساژ در ناحیه زیر شکم و کشاله ران کمک به کاهش درد های زایمانی
- ماساژ ناحیه کمر کمک به کاهش درد حین انقباض و چرخش سر جنین
- ماساژ پریینه کمک به افزایش خونرسانی و انجام زایمان طبیعی و کاهش صدمه به پریینه
- توصیه می شود قبل از ماساژ دستها چرب شود.





Questions?